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Fröhlich, Christiane

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CHRISTIANE FRÖHLICH

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Today, we have a better understanding than ever of the social phenomena associated with anthropogenic climate change, especially climate-related human mobility. Research has confirmed that climate change mostly engenders South-South movements,[1] internal displacement within the so-called Global South[2] and immobility,[3] thus essentially debunking the ongoing securitisation of so-called climate migration to the Global North.[4] Studies have also underlined that the effects of climate change play out differently for already disenfranchised or marginalised groups and elites, and that this discrimination is rarely sufficiently addressed in negotiation processes linked to the issue of climate change.[5]

This raises questions of both climate and mobility justice. The concept of mobility justice underlines that access to mobility is experienced unequally, along intersectional categories such as gender, race, religion, age or socio-economic status.[6] The concept of climate justice highlights the fact that although climate change is caused mainly by industrialised states, developing states bear the brunt of its

1 Weber, E. (2015), «Envisioning South-South Relations in the Fields of Environmental Change and Migration in the Pacific Islands – Past, Present and Futures», *Journal of the Global South* 2(1).

2 Foresight (2011), *Migration and Global Environmental Change* (London: The Government Office for Science).

3 Black et al. (2013), «Migration, Immobility and Displacement», *Environmental Science and Policy* 27(S1), S32–S43; Zickgraf, C., and Perrin, N. (2017), «Immobile and Trapped Populations», in Gemenne, F., Ionesco, D., and Mokhnacheva, D. (eds.), *Atlas Der Umweltmigration*, pp. 44–46 (München: oekom).

4 For a recent rendering, see Lustgarten, A. (2020, July 23), «The Great Climate Migration Has Begun», *The New York Times*, available at: www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html (accessed 29 July 2020).

5 Kaijser, A., and Kronsell, A. (2014), «Climate Change through the Lens of Intersectionality», *Environmental Politics* 23(3), 417–33.

6 Sheller, M. (2018), *Mobility Justice: The Politics of Movement in an Age of Extremes* (London and Brooklyn, NY: Verso).

impacts,[7] without adequate resource transfers, development assistance or equitable donor-recipient relationships.[8]

This contribution explores how different aspects of mobility and climate justice play out in the Mashriq,[9] a geographic region that Encyclopaedia Britannica defines as comprising the modern states of Egypt, Sudan, the Gulf states, Israel, Palestine, Jordan, Lebanon, Syria and Iraq.[10] The region is a prime example of the effects of anthropogenic climate change. It illustrates that how a society, state or individual is impacted by climate change depends on socio-economic and political conditions, and/or individual positionality. Studying the Mashriq thus provides an avenue to better understanding the interplay between climatic and non-climatic pressures, thereby offering a more comprehensive approach to questions of justice in the context of a changing climate.[11]

Climate change in the Mashriq

Like many other regions of the world, the Mashriq has been suffering from a rising average temperature, increasingly erratic precipitation patterns, sea-level rise, and an increase in both severity and frequency of extreme weather events such as heat waves, droughts and floods.[12] Climatic pressures are expected to increase further in the coming years and decades[13] and will likely impact water supply, crop production, health and economic growth.[14] For instance, the densely populated coastlines along the Red, Arabian and Mediterranean seas with their fertile coastal lands, shallow lagoons and fisheries are increasingly vulnerable to sea-level rise and

7 Sowers, J. (2019), «Understanding Climate Vulnerability in the Middle East and North Africa», *International Journal of Middle East Studies* (October), 1–5.

8 Klepp, S., and Herbeck, J. (2016), «The Politics of Environmental Migration and Climate Justice in the Pacific Region», *Journal of Human Rights and the Environment* 7(1), 54–73; Tanner, T., and Allouche, J. (2011), «Towards a New Political Economy of Climate Change and Development», *IDS Bulletin* 42(3).

9 Using «Mashriq» rather than «Near East» or «Middle East» helps to avoid the Eurocentric and orientalist connotations of the latter terms. For a discussion, see Culcasi, K. (2010), «Constructing and Naturalizing the Middle East», *Geographical Review* 100(4), 583–97.

10 The editors of the Encyclopaedia Britannica (n.d.), «Mashriq | geographical region, Middle East», *Encyclopaedia Britannica*, available at: www.britannica.com/place/Mashriq (accessed 30 July 2020).

11 Mason, M., Zeitoun, M., and Mimi, Z. (2012), «Compounding Vulnerability: Impacts of Climate Change on Palestinians in Gaza and the West Bank», *Journal of Palestine Studies* XLI(3), 38–53.

12 IPCC (2014), «Asia», in Barros, V.R. (ed.), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* available at: www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap24_FINAL.pdf, p. 1333.

13 Al-Saidi, M. (2020), «Contribution of Water Scarcity and Sustainability Failures to Disintegration and Conflict in the Arab Region – the Case of Syria and Yemen», in Amour, P.O. (ed.), *The Regional Order in the Gulf Region and the Middle East: Regional Rivalries and Security Alliances*, pp. 375–405 (Cham: Springer International Publishing).

14 IPCC (2014), «Livelihoods and Poverty», chapter 17 in *IPCC Report 2014, Part A: Global and Sectoral Aspects*, available at: www.ipcc.ch/report/ar5/wg2/livelihoods-and-poverty.

salinisation (Egypt, Gaza, Israel and Lebanon are cases in point).[15] Also, changing and inconsistent rain patterns will likely affect water availability and, thus, water utilisation – a development that led to a decrease in agricultural productivity, and even agricultural collapse, in parts of the region in the past.[16]

Although the peoples of the Mashriq have been adapting to changing climates for centuries, the speed and severity of anthropogenic climate change is creating new and unprecedented challenges.[17] This situation is exacerbated by the relative ability (and willingness) of regional governments to adapt to and mitigate climate change impacts. The World Bank's *World Development Report 2007* attests that countries in the Mashriq (and the Maghreb) not only suffer from physical resource scarcity, for instance of water, but that they are also characterised by a lack of both organisational capacity and accountability, which points to a breaking or broken social contract between the regional populations and their governing institutions and actors. Specifically, researchers diagnose regional public agencies with «overlapping and unclear functions or difficulties in coordinating», as well as a «lack of a sound institutional environment».[18] Although it is important to reflect on what is considered a «sound institutional environment» by whom, this diagnosis illustrates that while climate change effects are real in the Mashriq, the incapability or unwillingness of regional states to adapt to and mitigate the changing conditions is just as big of a problem.[19]

In addition, if and when efforts to mitigate climate change are made, pre-existing power structures within a state – together with the state's position within the international system – moderate who benefits from these efforts. Consequently, the responses of states in the Mashriq to climate change need to be understood as being embedded in specific North-South relations, pre-established patterns of international cooperation, as well as pre-existing sub- and international conflicts. For instance, a state's capacity to adapt to climate change often hinges on economic power: Economically weaker states, which are often less integrated into the global economy, have fewer options than rich(er) states. Post- and decolonial approaches help us to ask critically why states outside of the Global North often have less economic (and political) power, pointing to historically grown disbalances and inequalities in the international system. The effects of climate change can be outweighed by such power structures, for instance in the cases of Israel and Palestine, where Palestinian livelihoods are impacted far more severely by the effects of the Israeli occupation than by climate change (without wanting

15 Sowers, J. (2019), «Understanding Climate Vulnerability» (see note 7).

16 Wodon, Q. et al. (2014), «Climate Change, Migration, and Adaptation in the MENA Region», in Wodon, Q. et al. (eds.), *Climate Change and Migration. Evidence from the Middle East and North Africa*, World Bank Studies, pp. 3–35 (Washington, DC: World Bank).

17 Verner, D. (ed.) (2012), *Adaptation to a Changing Climate in the Arab Countries: A Case for Adaptation Governance and Leadership in Building Climate Resilience*, MENA Development Report (Washington, DC: World Bank), p. 9.

18 Al-Saidi, M. (2020), «Contribution of Water Scarcity» (see note 13).

19 Sowers, J., Vengosh, A., and Weinthal, E. (2011), «Climate Change, Water Resources, and the Politics of Adaptation in the Middle East and North Africa», *Climatic Change* 104(3–4), 599–627.

to negate climate change impacts in the Jordan River basin).[20] Importantly, the unprecedented severity of global warming can be used to «greenwash» such pre-existing power structures, effectively blaming climate change for worsening living conditions without acknowledging the role of political decision-making for those very conditions.[21]

It is therefore crucial to look at environmental change and responses to it not as separate from, but as integral to politics, both on the domestic and international levels. For instance, international climate change politics increasingly utilise climate policies as a new tool of governance,[22] for example by investing in climate-related interventions such as adaptation and mitigation measures, or by conditioning aid on climate policy reform. One example is the Paris Agreement of 2015, which was signed by all states of the Mashriq except war-ravaged Syria. The treaty promises new sources of financing and incentives for low-carbon development decisions to developing states and states that depend on fossil fuel exports.[23]

What is more, both national and international climate change policies can result in second-order effects of climate change, which are often neither recognised nor transparent. For instance, the (re-)nationalisation of natural resources or economic sectors can affect control of – and access to – resources and livelihoods for parts of a population or society.[24] Also, with a rise in awareness about climate change, the voices of international and non-governmental organisations grow stronger and can start to influence the power-knowledge nexus that is central for climate and adaptation politics.[25] Problematically for both trends, however, power relations on the ground and local, indigenous knowledge are rarely considered; in the worst case further weakening already marginalised and vulnerable populations.[26]

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20 Mason, M., Zeitoun, M., and Mimi, Z. (2012), «Compounding Vulnerability: Impacts of Climate Change on Palestinians in Gaza and the West Bank», *Journal of Palestine Studies* XLI(3), 38–53.

21 This has happened in Syria, for instance: Fröhlich, C. (2016), «Climate Migrants as Protestors? Dispelling Misconceptions about Global Environmental Change in Pre-revolutionary Syria», *Contemporary Levant* 1(1), 38–50.

22 Klepp, S., and Chavez-Rodriguez, L. (eds.) (2018), *A Critical Approach to Climate Change Adaptation: Discourses, Policies, and Practices* (London and New York, NY: Routledge/Taylor & Francis Group).

23 Sowers, J. (2019), «Understanding Climate Vulnerability» (see note 7).

24 Hein, J. (2020), *Political Ecology of REDD+ in Indonesia: Agrarian Conflicts and Forest Carbon* (n.p.: Taylor and Francis).

25 Morchain, D. (2018), «Rethinking the Framing of Climate Change Adaptation : Knowledge, Power, and Politics», in Klepp, S., and Chavez-Rodriguez, L. (eds.), *A Critical Approach to Climate Change Adaptation: Discourses, Policies, and Practices* (London and New York, NY: Routledge/Taylor & Francis Group); Eriksen, S.H., Nightingale, A.J., and Eakin, H. (2015), «Reframing Adaptation: The Political Nature of Climate Change Adaptation», *Global Environmental Change* 35, 523–33; Cameron, E.S. (2012), «Securing Indigenous Politics: A Critique of the Vulnerability and Adaptation Approach to the Human Dimensions of Climate Change in the Canadian Arctic», *Global Environmental Change* 22(1), 103–14.

26 Klepp, S., and Fröhlich, C. (2020), «Migration and Conflict in a Global Warming Era: A Political Understanding of Climate Change», *Social Sciences* 9(5), 78 (Multidisciplinary Digital Publishing Institute).

Climate change and human mobility in the Mashriq

Mobility, that is, the ability to change one's place of residence if needed (or wanted), is one of many ways of adapting to the effects of climate change. Environmentally induced mobility is not new. In the history of mankind, people have always responded to changing climatic conditions by moving out of one region and to another.[27] This option is not available for everyone, however; under some circumstances, climate change can also constrain mobility, raising questions of mobility justice. It is therefore crucial to ask who can move, and who cannot, in any given context.

Despite its deep entwinement with human society, a unified theoretical approach to environmentally-induced human mobility is still lacking. For instance, differences between a) climate variability and climate change, and b) responses to the two phenomena are often not adequately represented. Similarly, the differences and similarities between mobility in the context of slow- (rising temperature, droughts, land degradation) or fast-onset events (floods, storms, hurricanes) are still unclear.[28]

Impacts of fast-onset events such as hurricanes, torrential rains, floods and landslides on human movement are comparatively easy to determine. Research shows that, in most such cases, displacement tends to be temporary and over short distances.[29] This is often due to the fact that, in poor(er) countries, victims of such events do not have the resources to migrate over long distances, again pointing to issues of mobility justice.[30] Mobility following a fast-onset event is often short-term, as the majority of people return as soon as possible to rebuild their properties. In fact, this is one of the few points that research is in relative agreement on,[31] so that judging from past fast-onset events, they can be considered unlikely to cause significant long-term and long-distance movement, especially across international borders.[32]

Slow-onset events such as drought, desertification and a rise in temperature are generally associated with more gradually progressing movements. Here, research findings are less consistent. Although there are many well-documented cases of mass departures (predominantly internal displacement) in response to drought,

27 Romm, J. (2011), «The Next Dust Bowl», *Nature* 478(7370), 450–51; Marris, E. (2014), «Two-Hundred-Year Drought Doomed Indus Valley Civilisation», *Nature* (March).

28 Cattaneo, C., Beine, M., Fröhlich, C., Kniveton, D., Martinez-Zarzoso, I., Mastrorillo, M., … Schraven, B. (2019), «Human Migration in the Era of Climate Change», *Review of Environmental Economics and Policy* (June).

29 McLeman, R. A., and Gemenne, F. (2018), *Routledge Handbook of Environmental Displacement and Migration* (New York, NY: Routledge).

30 Lonergan, S. (1998), «The Role of Environmental Degradation in Population Displacement», *Environmental Change and Security Project Report* (4), 5–15; Zickgraf and Perrin (2017), «Immobile and Trapped» (see note 3).

31 McLeman and Gemenne (2018), *Routledge Handbook* (see note 29).

32 Cattaneo et al. (2019) «Human Migration» (see note 28).

also in the Mashriq,[33] other researchers have argued that the migration numbers are small compared to the number of people impacted by drought, pointing out that environmental change is just one of many factors influencing migration decisions.[34] In some cases in the Mashriq – pre-revolutionary Syria specifically – migration has even been shown to be more a function of political issues than associated with environmental issues, despite contrary claims in prominent discourses.[35] What is more, droughts and other slow-onset events can also reduce movement, especially in poor countries with liquidity constraints.[36]

The picture is further complicated by the many forms human mobility can take, ranging from internal to international, and from seasonal and short-term to permanent. Migration is also influenced by different factors that are highly context-dependent, including migration history and the interaction between economic, political, demographic, social and environmental factors in origin as well as destination countries.[37]

One way of approaching these complex relationships and assumed linkages is to look at how climate change interacts with phenomena that research has identified as influencing human mobility. Economic conditions are among them, especially income differentials (differences in the return to labour between origin and destination) and income variability (fluctuations in income over time).[38] For instance, economic growth has been found to be negatively impacted by worsening climatic conditions.[39] Although most studies do not focus on the Mashriq – as the data situation is often less than ideal – some of these research findings can likely be extrapolated to this region. For instance, one study finds that in sub-Saharan states, rainfall was a significant negative influence for economic growth,[40] meaning that less rain equals less income, resulting in a) a widening income gap between origin

33 Miyan, M.A. (2015), «Droughts in Asian Least Developed Countries: Vulnerability and Sustainability», *Weather and Climate Extremes* 7, 8–23; Piguet, E., and Laczko, F. (eds.) (2014), *People on the Move in a Changing Climate: The Regional Impact of Environmental Change on Migration* (Dordrecht: Springer).

34 Smith, K. (2013), Environmental Hazards: Assessing Risk and Reducing Disaster (Routledge); Black, R. et al. (2011), «The Effect of Environmental Change on Human Migration», *Global Environmental Change* 21, S3–S11; Martin, M. et al. (2014), «Climate-related Migration in Rural Bangladesh: A Behavioural Model», *Population and Environment* 36(1), 85–110.

35 Fröhlich, C. (2016), «Climate Migrants» (see note 352); Selby, J. et al. (2017), «Climate Change and the Syrian Civil War Revisited», *Political Geography* 60, 232–44.

36 Cattaneo, C., and Peri, G. (2016), «The Migration Response to Increasing Temperatures», *Journal of Development Economics* 122, 127–46; Gröschl, J., and Steinwachs, T. (2017), «Do Natural Hazards Cause International Migration?», *CESifo Economic Studies* 63(4), 445–80.

37 Cattaneo et al. (2019) «Human Migration» (see note 28); Black (2011), «The Effect» (see note 34); Martin (2014), «Climate-related Migration» (see note 34).

38 Lilleør, H.B., and Van den Broeck, K. (2011), «Economic Drivers of Migration and Climate Change in LDCs», *Global Environmental Change* 21, S70–S81.

39 Dell, M., Jones, B.F., and Olken, B.A. (2009), «Temperature and Income: Reconciling New Cross-sectional and Panel Estimates», *American Economic Review* 99,198–204.

40 Barrios, S., Bertinelli, L., and Strobl, E. (2010), «Trends in Rainfall and Economic Growth in Africa: A Neglected Cause of the African Growth Tragedy», *Review of Economics and Statistics* 92, 350–66.

and destination countries, and b) an increase in mobility of those who depend on consistent precipitation, that is, especially farmers and herders.[41]

However, as mentioned above, liquidity constraints can also limit mobility options, pointing to mobility injustices related to socio-economic status.[42] Poor people have higher incentives to migrate, as they are often highly vulnerable to the impacts of climate change, but they have little to no capacity to adapt. At the same time, they lack the resources to cover the cost of moving in a planned, more long-term way. They are thus doubly at risk, not being able to move away from environmental crises while also having few resources to mitigate their impact.[43] Although this often results in precarious immobility,[44] it can also result in «crisis» or «survival migration».[45]

That increasing migration can be a result of decreasing agricultural productivity has been shown, for instance, for international mobility towards states belonging to the Organisation for Economic Co-operation and Development (OECD).[46] Also, a decrease in income caused by natural disasters (connected to both climate change and other anthropogenic activity) can lead to higher numbers of internally displaced people, as well as greater levels of international mobility.[47] In fact, the prospect of losing income, or of lasting income variability, can already lead to higher levels of mobility, again especially for households depending on agricultural activity, as has been shown for Syria as well as other states in the Mashriq.[48] This is often internal and seasonal movement.

If income losses are most likely to happen in families and households that depend on agriculture – with the likelihood of migration increasing proportionate to the decrease in land profitability and crop yields – then less-developed states are more likely to suffer from this kind of adverse climate impact, pointing

41 Cattaneo et al. (2019) «Human Migration» (see note 28).

42 Kniveton, D., Schmidt-Verkerk, K., Smith, C., Black, R. (2008), «Climate Change and Migration: Improving Methodologies to Estimate Flows», pp. 29–36, available at: www.iom.cz/files/Climate_Change_and_Migration_MRS_331.pdf; Bryan, G., Chowdhury, S., and Mobarak, A.M. (2014), «Underinvestment in a Profitable Technology: The Case of Seasonal Migration in Bangladesh», *Econometrica* 82(5), 1671–1748; Cattaneo, C., and Peri, G. (2015), «The Migration Response to Increasing Temperatures», Working Paper 21622 (Washington, DC: National Bureau of Economic Research).

43 Foresight (2011), *Migration and Global Environmental Change* (see note 2); Black (2011), «The Effect», *Global Environmental Change* 21, S3–S11.

44 Black et al. (2013), «Migration, Immobility and Displacement» (see note 3).

45 Martin, S., Weerasinghe, S., and Taylor, A. (2014), «What Is Crisis Migration?», *Forced Migration Review* 45, available at: www.fmreview.org/crisis/martin-weerasinghe-taylor%20.html; Betts, A. (2013), *Survival Migration. Failed Governance and the Crisis of Displacement* (Ithaca, NY: Cornell University Press)

46 Cai, R., Feng, S., Pytlikova, M., and Oppenheimer, M. (2016), «Climate Variability and International Migration: The Importance of the Agricultural Linkage», *Journal of Environmental Economics and Management* 79,135–51.

47 Beine, M., and Parsons, C. (2015), «Climatic Factors As Determinants of International Migration», *Scandinavian Journal of Economics* 117, 723–67.

48 Selby (2017), «Climate Change» (see note 35).

to aforementioned issues of climate justice. Such states often depend much more on agriculture than industrialised states and – due to colonial exploitation and its economic, political and social consequences – are often less capable of adapting to changing climatic circumstances.

The relationship between climate change and human mobility may also be affected by socio-political factors. Here, the linkages between violent conflict and climate change have received a lot of scholarly attention in past years.[49] Studies are inconclusive, and the often taken-for-granted causality between climate change, conflict and migration/mobility is contested.[50] In Syria, for instance, some researchers suggest that a «century drought» thought to have been connected to global warming contributed to the 2011 uprising and war by causing massive increases in internal mobility.[51] Such simple and linear causalities have been rigorously questioned, however, highlighting the complex and contextual character of climate, migration and conflict connections.[52] For other regions, it has also been shown that climate-related conflict not only causes migration, but may also restrict it.[53]

Social and economic factors also play a role in determining whether climate change translates into mobility in the Mashriq. For instance, climate change affects income differentials between origin and destination countries, and it can increase economic uncertainty, fostering conditions conducive to emigration.[54] At the micro-level, the individual decision and ability to move away from environmental crisis is influenced by the positionality of the potential migrant, that is, by the socio-economic and political characteristics of the individual, household and community exposed to the climatic events.[55] This means that intersectional

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49 Koubi, V. (2019), «Climate Change and Conflict», *Annual Review of Political Science* 22(1), p. null.

50 Abel, G.J. et al. (2019), «Climate, Conflict and Forced Migration» (see note 238); Brzoska, M., and Fröhlich, C. (2016), «Climate Change, Migration and Violent Conflict: Vulnerabilities, Pathways and Adaptation Strategies», *Migration and Development* 5(2), 190–210; Hermans, K., and Ide, T. (2019), «Advancing Research on Climate Change, Conflict and Migration», *Die Erde – Journal of the Geographical Society of Berlin* 150(1), 40–44.

51 Femia, F., and Werrell, C. (2012, March 3), «Syria: Climate Change, Drought and Social Unrest», *Think Progress*, available at: https://thinkprogress.org/syria-climate-change-drought-and-social-unrest-3db624b8dd76; Gleick, P.H. (2014), «Water, Drought, Climate Change, and Conflict in Syria», *Weather, Climate, and Society*, 6(3), 331–40; Kelley, C.P. et al. (2015), «Climate Change in the Fertile Crescent and Implications of the Recent Syrian Drought», *Proceedings of the National Academy of Sciences* 112(11), 3241–46; Werrell, C., Femia, F., and Sternberg, T. (2015), «Did We See It Coming? State Fragility, Climate Vulnerability, and the Uprisings in Syria and Egypt», *SAIS Review of International Affairs* 35(1), 29–46.

52 Ide, T. (2018), «Climate War in the Middle East? Drought, the Syrian Civil War and the State of Climate-Conflict Research», *Current Climate Change Reports* 4, 347–54; Selby (2017), «Climate Change» (see note 366); Selby, J. (2018), «Climate Change and the Syrian Civil War, Part II: The Jazira's Agrarian Crisis», https://doi.org/10.1016/j.geoforum.2018.06.010.

53 Simpkins, P. (2005), *Regional Livestock Study in the Greater Horn of Africa* (Geneva: International Committee of the Red Cross).

54 Cattaneo et al. (2019) «Human Migration» (see note 28).

55 Black (2011), «The Effect» (see note 34); Martin (2014), «Climate-related Migration» (see note 34).

characteristics such as individual wealth, gender, age, health, pre-existing migration networks, etc., play a key role.[56]

Gender seems to play a particularly important role for mobility and climate justice in the Mashriq. Unequal gender relations as well as gender-differentiated access to resources and the labour market can render women more vulnerable to climate change impacts, thus increasing the number of reasons for moving. One study reports how female interviewees in the Mashriq recalled how prolonged droughts led to economic difficulties, which made hiring cheap agricultural labour impossible, so that the female (or female-read) members of the household had to start working on the fields in addition to their common chores.[57] This was cited as a reason for moving away from the countryside. But patriarchal structures may already exclude them from (parts of) the labour market, impairing their ability to move. For instance, if the male (or male-read) members of the household move away before the rest of the family, women are often left to deal with the increased workload at home. For the women who do migrate from the Mashriq, job opportunities are often less attractive than for other members of the household.[58] Although there is no agreement as to the impact that gender has on human mobility, studies showing that women are migrating less due to climate change[59] as well as studies showing the opposite[60] indicate that gender is a key factor for both mobility and climate justice.

Furthermore, whether and how state and non-state actors in a given country address climate change impacts also influences migration decision-making. It is therefore relevant to look at state or government approaches to climate change in the Mashriq. As shown by Sowers, national communications from states in Mashriq «provide little insight into climate inequality or the political and economic factors that structure them».[61] Structural drivers of vulnerability towards climate change are commonly presented as «natural» conditions rather than as effects of policy choices, historical processes, or socio-cultural norms and conventions, thus effectively «greenwashing» vulnerabilities and avoiding responsibility. But rapid population growth, urbanisation trends, migration to urban centres and gender relations

56 Sowers, J. (2019), «Understanding Climate Vulnerability» (see note 7).

57 Wodon, Q. et al. (2014), «Climate Change» (see note 16).

58 Ibid.

59 Dillon, A., Mueller, V., and Salau, S. (2011), «Migratory Responses to Agricultural Risk in Northern Nigeria», *American Journal of Agricultural Economics* 93(4), 1048–61; Gray, C., and Mueller, V. (2012), «Drought and Population Mobility in Rural Ethiopia», *World Development* 40(1), 134–45; Mueller, V., Gray, C., and Kosec, K. (2014), «Heat Stress Increases Long-Term Human Migration in Rural Pakistan», *Nature Climate Change* 4(3), 182–85.

60 With regard to labour migration, see Gray, C., and Mueller, V. (2012), «Natural Disasters and Population Mobility in Bangladesh», *National Academy of Sciences* 109(16), 6000–05; Thiede, B., Gray, C., and Mueller, V. (2016), «Climate Variability and Inter-Provincial Migration in South America, 1970–2011», *Global Environmental Change* 41, 228–40; Baez, J. et al. (2017), «Heat Exposure and Youth Migration in Central America and the Caribbean», *American Economic Review* 107(5), 446–50.

61 Sowers, J. (2019), «Understanding Climate Vulnerability», p. 2 (see note 7).

affect how climate risks are distributed and are a direct result of political decisions. For instance, decisions not to fund family planning and social support systems can increase climate vulnerability for certain societal groups.[62] Similarly, societal movements that focus on issues related to climate change – for instance the environment, pollution or health – are mostly silenced at the national level in the Middle East.[63] It is particularly interesting, in light of the upheavals of 2011/12, that the relationship between the various revolutionary movements across the region and climate governance is not identified in national communiqués about climate change from Mashriq states, for instance the individual climate action plans following the Paris Agreement.[64] Overall, programmes targeting households and communities that are particularly vulnerable and exposed to climate change impacts seem to be the exception rather than the rule throughout the region.[65] The focus most commonly is on the national and international (meso and macro) levels, often perpetuating existing power structures and risking already dire and worsening living conditions in marginalised and vulnerable communities.

Conclusion

The main limitation for a study discussing climate and mobility justice in the Mashriq is that there is little systematic evidence available to analyse the relationship between climate change and human mobility in the region, as many states do not conduct regular surveys or collect and share other relevant data. This is at least in part due to the fact that such data is considered political, for instance when discussing water availability, utilisation and distribution in the Jordan River basin.[66] But nonetheless, the mechanisms discussed above have been shown for the Mashriq, too. The relationship between climate and mobility in the region is shaped by whether climate events are slow- or fast-onset, and climate-related mobility differs in terms of duration, space covered and level of voluntariness. In particular, there seems to be a link between slow-onset events such as droughts and increased mobility, as chronic droughts lead to decreasing crop yields, making agricultural activity increasingly less viable.[67]

62 Sowers, J. (2019), «Understanding Climate Vulnerability» (see note 7).

63 Sowers, J. (2018), «Environmental Activism in the Middle East and North Africa», in Verhoeven, H. (ed.), *Environmental Politics in the Middle East*, pp. 27–52 (Oxford: Oxford University Press).

64 Sowers, J. (2019), «Understanding Climate Vulnerability» (see note 7). See this webpage for all Intended Nationally Determined Contributions: www4.unfccc.int/sites/submissions/indc/Submission%20Pages/submissions.aspx.

65 Wodon, Q. et al. (2014), «Climate Change» (see note 16).

66 Fröhlich, C. (2012), «Water : Reason for Conflict or Catalyst for Peace? The Case of the Middle East», *L'Europe en Formation* 365(3), 139.

67 Wodon, Q. et al. (2014), «Climate Change» (see note 16).

Socio-economic factors are found to be at least as important as changes in climate, however.[68] As has been shown above, understanding aspects of mobility and climate justice in the Mashriq requires a thorough understanding of the political, economic and social factors that structure climate vulnerability and adaptation or mitigation capacities. Importantly, when discussing these issues in the Mashriq (or any region, for that matter), we need to reflect on two key questions.

The first of these concerns the focus on mobility in the media and policy debates: What does it reveal, and what does it hide? In addressing this issue, when discussing mobility and climate justice, we need to remember that movement away from environmental risk is just one possible strategy for adapting to climate change – and one that is not available to everyone. Also, although increased mobility in response to changing climatic conditions is commonly considered a key adaptive strategy by those who undertake it,[69] it can also be interpreted as a failure to adapt, occurring only when all else has failed. For instance, an increasingly precarious life in the countryside, including lack of water, food, income and jobs, has been reported to lead to family members working the fields instead of going to school, to the whole family eating less, and to selling assets – before migration was even considered.[70] In both cases, however, it is necessary to reflect on why mobility is deemed positive or negative, and by whom.

Alternatively, increased mobility could be seen as an option to diversify adaptive capacities, for instance by giving household members the opportunity to build new knowledge on agricultural innovations through education, which can help family members at home better adapt to changing environmental conditions. This can happen through shared new knowledge, for instance about more climate-resilient crops, less water-intensive irrigation methods or new techniques of crop and feed preservation. It may also happen through direct money transfers (remittances), which can help alleviate income fluctuations or losses in the place of origin. But each of these adaptive measures is limited by the state of mobility and climate justice in the respective states. Not everyone can move, even when at extreme risk, and not every state can adapt to climate change in an effective and targeted way.

The second question we must ask relates to changing conceptions of «human» affairs in our era, a moment at which the relationship between natural, social and political science is being rethought. This last problem can be summarised as follows: What does the focus, in mainstream political and media debates, on *human* mobility in the context of *man-made* global warming hide with regard to nature and the planet as a whole? As addressing this question is beyond the scope of this chapter, I close by raising it to invite reflection upon the fact that vulnerability

68 Grant, A., Burger, N., and Wodon, Q. (2014), «Climate-Induced Migration in the MENA Region: Results from Qualitative Fieldwork», in Wodon, Q., Liverani, A., Joseph, G., and Bougnoux, N. (eds.), *Climate Change and Migration: Evidence from the Middle East and North Africa* (Washington, DC: World Bank).

69 McNamara, K., Bronen, R., Fernando, N., and Klepp, S. (2018), «The Complex Decision-Making of Climate-Induced Relocation: Adaptation and Loss and Damage», *Climate Policy* 18,111–17.

70 Wodon, Q. et al. (2014), «Climate Change» (see note 16).

to climate impacts is by no means limited to humans. On the contrary, in the Anthropocene, it has become plainly evident that human life cannot be sustained without extending equal care to nature in all its facets. Climate change will continue to affect both human and non-human life on this planet, including increasing rates of extinction, new patterns of mobility of flora, fauna, water, fire and so on.[71] Examples from the Mashriq include the effect of invasive species on biodiversity in the Jordan River basin,[72] and an increase in forest fires across the region, for instance in Iran.[73] Efforts to achieve climate justice and mobility justice therefore need to engage with the movement for non-human life and climate vulnerability, too.

71 Baldwin, A., Fröhlich, C., and Rothe, D. (2019), «From Climate Migration to Anthropocene Mobilities: Shifting the Debate», *Mobilities* 14(3), 289–97.

72 See www.biodiv.be/jordan/biodiversity/species-diversity/invasive-and-introduced-species-1/invasive-and-introduced-species (accessed 20 August 2020).

73 Hadian-Jazy, T. (2020, July 20), «The Forest Fires in Iran That Won't Stop Burning», *Atlantic Council*, available at: www.atlanticcouncil.org/blogs/iransource/the-forest-fires-in-iran-that-wont-stop-burning (accessed 20 August 2020).